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09/856,362	05/22/2001	Dominique Hamoir	Q64544	6876

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EXAMINER
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PASCAL, LESLIE C

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2613

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/856,362  
Filing Date: May 22, 2001  
Appellant(s): HAMOIR, DOMINIQUE

\_\_\_\_\_  
David J. Cushing  
For Appellant

**EXAMINER'S ANSWER**

**MAILED**  
**APR 20 2007**  
**GROUP 2600**

This is in response to the appeal brief filed January 11, 2007 appealing from the Office action mailed January 11, 2007.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

6985283	ISLAM ET AL	1-2006
6587241	SALEH	7-03

EP0749224

CHRAPLYVY ET AL

12-1996

The appellant argues that no one has considered the problems that he has. The above reference issued after the examiner had written the final office action. See column 9, lines 29-38; column 20, lines 19-24 and 46-47.

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 24-25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In regard to claim 24 (as in previous claim 9), it appears that there is no separate means that provides the compensation. How can one single means cause the problem AND fix the problem? THE APPELLANT ONLY CLAIMS ONE MEANS IN THE CLAIM. It is a fiber. It is unclear how the appellant can argue that this is not a single means claim, if there is only one means. See MPEP 2164.08(a). In regard to claim 25, it is unclear how the attenuation is done in a distributed way. The specification does not teach attenuation which is distributed.
2. Claims 1-6, 11-18, 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saleh (6587241).

Saleh teaches a broad band WDM system (claim 20, column 5, line 66-column 6, line 2; column 8, lines 1-11 see the word BOTH in line 7) which has a fiber that is subject to Raman effect (attenuation, column 4, lines 25-29; and Raman fiber-column 6, line 42)

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and means to compensate for the attenuation (amplifiers), which compensate for energy transfers (partitioning in order to compensate for each band of wavelengths, column 5, lines 35-43). The bandwidth used is 1300-1650 and is greater than 20-30 THz and extends beyond 1620 (the 1650 nm range). In that he says the 1650 RANGE, it would have been obvious to use wavelengths above 1650. In regard to claims 5 and 16-17, he teaches a distributed amplifier (column 6, lines 63-66) which is the element that the appellant uses to provide this function. In regard to claim 18, see column 7, lines 3-10. Saleh is concerned with using broad wavelengths together. The appellant's specification teaches that this causes energy transfers. Although Saleh does not specifically teach what causes the attenuation, Raman effect is caused by using wavelengths in very broad wavelengths together (appellant's specification page 4, lines 12-18) which Saleh has. Saleh teaches compensating by partitioning wavelengths into bands in order to compensate them, it would have been obvious, if not inherent (since he is using the same means as the appellant-see claim 13 of Saleh, he also says that he uses different types for different bands) that he would compensate for Raman effect. The appellant's specification teaches that using wavelengths over large bandwidths "generates distortion by crosstalk between the various channels" (appellant's specification page 4, lines 12-18).

3. Claims 7-8, 10, 19-20, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saleh (6587241) as applied to claims 1-6 and 11-18 above, and further in view of Chraplyvy (EP0749224).

In regard to claim 10, Saleh teaches that the amplifier can serve multiple purposes such as providing different levels of amplification of the wavelengths. See column 10 lines 33-46 of Saleh. He teaches using different amplifiers in parallel/serial in order to correct for different wavelength ranges. In that the Raman effects the transfer of power from lower to higher channels, it would have been obvious to decrease power levels for long wavelengths as taught by Chraplyvy in order to compensate for SRS degradation (claim 1 of Chraplyvy) in at least one of the amplifiers of Saleh. In that it is well known for amplifiers to operate as attenuators and Chraplyvy teaches that his amplifier is accompanied by a filter, which provides decreased power level for a long wavelength channel the filter operates as an attenuator for longer wavelength channels.

#### **(10) Response to Argument**

In regard to claim 24, the appellant argues, "No claims are directed to the fiber itself" but to a fiber used in a broadband system. He argues that since the word "means" is never used, he does not have a "single means" claim. He goes on to argue that under 35 USC 112, *sixth paragraph*; means plus function language is only permitted in claims to a combination of elements. According to MPEP 2164.08(a) which is the section of the MPEP dealing with "single means" claims, "means recitation does not appear in combination with another recited element of means and is subject to undue breadth" and the problem with "a single means claim covers every conceivable means for achieving the stated purpose... because the specification disclosed at most only those means known to the inventor". It goes on to say that this is a 35 USC 112,

*first paragraph* problem. The appellant claims ONE means. It is a fiber. The problem is that the fiber is not in combination with any other element and is subject to undue breath. The claim reads on any fiber in any situation in which compensation can be made. The appellant in his arguments says that the fiber "will provide compensation for enrichment in the upper region of a very broad band if the very broad band is positioned correctly relative to the region of increased linear losses in the fiber" (which is not claimed). He says that the fiber provides compensation for enrichment (that is caused by the fiber) at the end of band of channels used. There is only one means claimed (a fiber), the fiber provides the enrichment (the problem) and compensates for the enrichment. In several office actions, the examiner has asked, "If the fiber is causing the problem and correcting the problem, is there really a problem?" The appellant has never answered this question.

As written, the claims claim that the fiber alone is providing the compensation. The appellant argues that the fiber provides the compensation if the very broad band is positioned correctly relative to the region of the increased linear losses in the fiber (page 10, lines 1-4 of appeal brief). It appears that the appellant is arguing something essential for the invention to work, that is not claimed (the very broad band must be positioned correctly relative to the region of the increased linear losses in the fiber).

IN RE HYATT says on page 197, "In claim 35, the invention defined is what follows the word "comprising." Indeed, appellant has admitted that claim 35 is drawn to only a single element when he asserts that it is not drawn to a combination." (Note that HYATT says single element, not single means).

Following the word, "comprising" in claim 24 is a single element, a fiber.

Although the claims in HYATT are in a means plus function form, this is not the critical issue for single means. HYATT is concerned with whether the single element (whether or not it is in means plus function form) is in combination with another element.

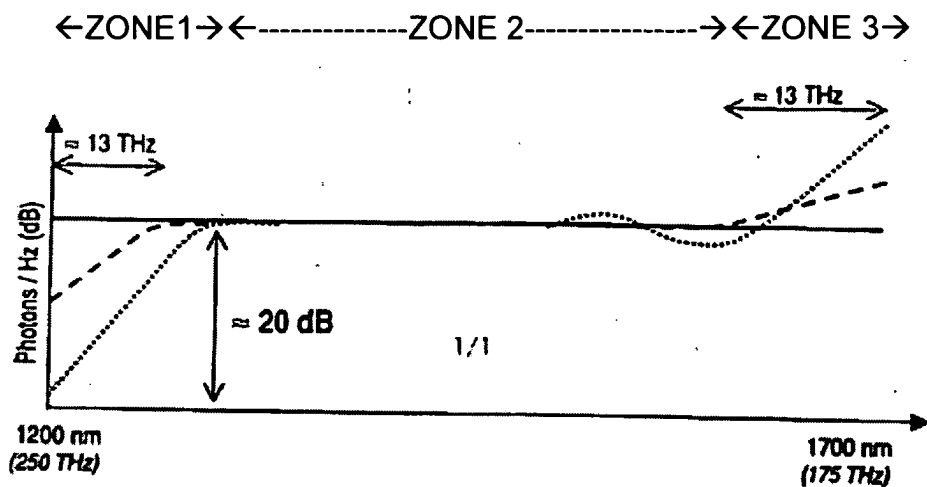
In regard to claim 25, the examiner says that the specification does not teach that the compensation means attenuates the enrichment of the channels over the end of the band "in a distributed way". The appellant argues, "enrichment compensation is achieved by providing a gain less than the average gain and/or by extending the transmission window so as to encounter increased linear losses in the fiber". The specification does not teach that this attenuates in a distributed way. From the claim and the specification, there is nothing that clearly would provide compensation in a distributed way. Further, this argument appears to no longer have a compensating means (of claim 11 which claims optical media and compensation means-if the media is the compensating means, then there is no longer a compensating means). This argument says that the media provides the compensation.

In regard to the appellant's arguments drawn to the art rejection, the appellant's specification teaches that when a very broad band is used the bands (ZONES) have the following characteristics. The following figure may help to understand the issues. It shows the three zones. The explanation below teaches what the appellant says happens in each zone, which of the appellant's claims read on each zone and how the appellant compensates for each zone. The next section explains how Selah reads on each zone (or uses the same compensation means as the appellant in the same type of



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system). Since Selah teaches the same means in a very broadband system, Selah obviously reads on the claims.



Zone 1 is the section that has the signal ramping up (dotted or dashed). Zone 2 has a flat line. Zone 3 has dotted and ramped line up. Claims 1 and 11 generically claim compensation (no zone specified).

**ZONE 1**

Appellant says:

Need amplification much greater in this zone (page 9, lines 13-14) which is compensated by: distributed amplification (page 7, line 33; page 9, lines 18-19 and page 11, lines 28-31) specifically done by Raman amplification (page 9, lines 18-19).

Claims 5-6, 14-18 are drawn to ZONE 1

**ZONE 2**

Need amplification in which the gain is flat (page 11, line 20 and page 11, line 23). no means claimed

No claims drawn to ZONE 2

**ZONE 3**

Need distributed loss (page 7, line 34) which is compensated by:  
1) using lower powers (page 10, line 1 and lines 30-31). He says this can be done using distributed amplifiers in the first zone (page 11, lines 2-3) OR  
2) using increasing linear losses in the fiber (page 10, lines 8-10) which be provided by G652 fiber OR  
3) attenuation (page 10, lines 15-16)

Claims 7-8, 19-20, 23-25 are drawn to ZONE 3

**ZONE 1**

Selah teaches:

Distributed amplifiers /Raman amplifiers (column 6, lines 42-43). He says they they can be serial to control different wavelength groups (column 6, lines 64-66)

**ZONE 2**

column 7, lines 3-10 (this is C band)

**ZONE 3**

1) distributed amplifiers (column 6, lines 42-43) and Chraplyvy is used with regard to this  
2) different fibers may be used (column 6, lines 52-61), one such fiber is single mode (G652 is single mode)

3) I used Chraplyvy for this and the fact that amplifiers can be used as attenuators

The appellant's main arguments are that Selah does not use a very broad band (see claim 20, column 5, line 66-column 6, line 2; column 8, lines 1-11 see the word BOTH in line 7 of Saleh. Saleh teaches going to the band below/ZONE 1 and the band above/ZONE 2). The appellant argues that Saleh does not teach specifics of how he provides the gain/compensation. Another argument is that since Selah does not realize that the special characteristic of energy transfers between channels caused by the Raman effect over the very broad band, it is not possible for Saleh to compensate for the energy transfer caused by the Raman effect (first paragraph of page 12 of APPEAL BRIEF). See the above figure with separate zones. The appellant teaches that because a very broad band is used the zones occur as shown. Selah teaches using a very broad band (claim 20, column 5, line 66-column 6, line 2; column 8, lines 1-11 see the word BOTH in line 7) and Raman (attenuation, column 4, lines 25-29; and Raman fiber-column 6, line 42). He also teaches using the same elements in his system that the appellant uses to provide the compensation. It is unclear why the appellant feels that Selah's elements, which are the same as the appellant's, used in the same type of system, provide a different result. See MPEP 716.02(b) and 716.02 (c) section II. These teach that the appellant has the burden to show what the benefit his claims have over the prior art. And MPEP 2144 has a section that says that the rationale for using means may be different than the appellant's and still is obvious. In regard to the appellant's argument that Selah would not know how to control the amplifiers and what

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fiber to use, the appellant does not teach specifics of how to control the amplifiers or what type of fiber to use (beyond saying that it may be a G652 which is the STANDARD for single mode optical fibers which Saleh teaches in column 6, line 55). It appears that the appellant feels that Saleh has to teach specifics that the appellant does not. The appellant argues that Saleh partitions so that if one amplifier fails it will not affect the other wavelength groups. Saleh teaches that different fibers and amplifiers can be used to correct different problems (column 6, lines 58-66). In that section he teaches that the amplifiers can provide serial amplification of the wavelength GROUPS. In column 8, lines 20-24, Saleh teaches using amplifiers to "provide Raman gain substantially to a corresponding wavelength group in the signal wavelength range and CONTRIBUTE TO A LESSER EXTENT TO THE RAMAN GAIN IN OTHER WAVELENGTH GROUPS" (emphasis added). On the bottom of page 14 to the top of page 15 of the Brief, the appellant argues that Saleh does not teach controlling the gain. See column 6, lines 60-61 and column 6, lines 66-column 7, line 2 in which he teaches providing different gains to different groups.

With regard to the rejection of Saleh in view of Chraplyvy et al, the appellant argues that Saleh does not teach a broad band (see claim 20, column 5, line 66-column 6, line 2; column 8, lines 1-11 see the word BOTH in line 7 of Saleh). He teaches that Chraplyvy never mentions specific ranges. Chraplyvy teaches shaping an amplifier output to offset depletion of **high frequency channels** improves signal capacity. Since Saleh teaches controlling amplifiers at different ranges in order to control the gain, it would have been obvious to use the teachings of Chraplyvy in order to shape the

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amplifier output to offset depletion of the higher frequency channels of Saleh in order to improve the signals capacity as taught by Chraplyvy. In addition, in view of the appellant's teachings that the distributed amplification of lower bands may provide this offset (appellant's page 11, lines 2-3), it would appear that Saleh could read on these claims with or without the addition of Chraplyvy since Saleh teaches distribute amplification.

Most of the appellant's arguments are drawn to issues not in the claims.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.


For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Leslie Pascal  
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